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DEVELOPMENT AND INTERNATIONAL ECONOMIC COOPERATION: DESERTIFICATION AND DROUGHT

Implementation in the Sudano-Sahelian region of the Plan of Action to Combat Desertification

Report of the Secretary-General

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I. INTRODUCTION

1. The General Assembly, in its resolution 35/73 of 5 December 1980, requested the Governing Council of the United Nations Environment Programme (UNEP) to report every other year to the General Assembly, through the Economic and Social Council, on the overall implementation of the Plan of Action to Combat Desertification. Further, in its resolution 39/168 B of 17 December 1981, the Assembly requested the Governing Council to make the necessary arrangements at each session for submitting a report to the General Assembly, through the Economic and Social Council, on the implementation in the Sudano-Sahelian region of the Plan of Action to Combat Desertification.

2. In its decision 16/22 A, adopted on 31 May 1991, the Council authorized the Executive Director to submit the present report, which includes his report on the implementation of the Plan of Action to Combat Desertification in the Sudano-Sahelian region on behalf of the Council, through the Economic and Social Council, to the General Assembly at its forty-sixth session.

II. IMPLEMENTATION OF THE PLAN OF ACTION TO COMBAT DESERTIFICATION IN 1989-1990

3. The major global challenge to produce more food and domestic fuel for populations that are growing faster than available resources is a cause of land degradation, especially desertification and deforestation, which affect more than 75 countries in the dry regions. In the developing countries, anthropogenic factors, particularly poverty and related bad land use practices, are responsible for the severe damage to these fragile ecosystems. Such damage is primarily due to excessive exploitation beyond the inherent potential of the rangelands, cutting of trees at rates faster than their regeneration, and over-dosing farmlands with irrigation water. There is a growing consensus that in the developed countries similar damage is due to excessive applications of agro-chemicals that have had detrimental side-effects on soil, water, air and human health.

4. The Plan of Action to Combat Desertification, which has provided the basis for UNEP assistance to Governments in addressing desertification problems, was evaluated during 1989-1990 in accordance with Governing Council decision 15/23. The findings of the evaluation, conducted by international scientists with extensive experience in desertification control, reconfirmed the validity of the Plan of Action as an appropriate instrument to assist Governments in developing national programmes for arresting the process of desertification (a full report of the evaluation is contained in document UNEP/GC.16/16/Add.1). Several delegations at the first substantive session of the Preparatory Committee for the United Nations Conference on Environment and Development 1992 also expressed the view that the Plan of Action is still valid and remains a scientifically sound basis for combating desertification. There is general agreement, too, among the affected nations that land degradation and desertification require international financial support for

long-term development. However, the major events during 1989-1990 tend to militate against international commitments for aid in anti-desertification efforts.

5. It is against this uncertain global situation that UNEP continues to emphasize in its programmes of assistance to Governments the urgent need for the creation of ecologically sound sustainable farming systems. This calls for bringing into play the traditional systems used by local people so as to devise effective strategies for the promotion of popular participation in programmes of desertification control. The UNEP approach to Governments and non-governmental organizations concerned with desertification control has been consistent in stressing that it is these measures that are critical and decisive for the efficient utilization of the limited financial resources available. In this context, UNEP has focused its efforts during the period 1989-1990 in engaging donors and the Governments of countries affected by desertification in a dialogue to search for effective institutional mechanisms for integrating desertification control programmes into overall national development plans and priorities. In addition, assistance has been provided to selected countries in the identification and development of methodologies for assessing and mapping the status of desertification - its extent, rate and risk - as knowledge of all these parameters is essential to effective planning for desertification control. Extensive consultations have been held also with national and regional research institutions with a view to enhancing the methodologies applicable to global, regional and national assessment of desertification. The present activity report gives an account of these actions undertaken by UNEP during the period under review.

A. Technical assistance to Governments

1. National plans of action to combat desertification

6. At its forty-fourth session, the General Assembly adopted resolution 44/172 A of 19 December 1989, in which it requested the Secretary-General, in consultation with the Executive Director of UNEP, to take specific actions, including the evaluation of progress in implementing the Plan of Action, the preparation of a report containing relevant expert studies on financing anti-desertification programmes and decided that the Consultative Group for Desertification Control would meet annually until 1992 and biennially thereafter. The General Assembly also requested the Secretary-General, together with the Executive Director of UNEP and the Administrator of the United Nations Development Programme (UNDP), to report to it at its forty-sixth session, through the Economic and Social Council, on the various provisions of the resolution.

7. In its decision 15/23 of May 1989, the Governing Council invited Governments of countries prone to desertification to consider according priority to anti-desertification programmes in their national development plans by preparing national programmes to combat desertification within the framework of national plans for development of natural resources and

rehabilitation of impaired ecosystems. The Administrative Committee on Coordination (ACC) also noted that one of the key impediments to the implementation of the Plan of Action was the lack of well-formulated national plans of action to combat desertification and national policies to support them. ACC urged concerned members of the Inter-Agency Working Group on Desertification to assist Governments to orient their development approaches towards sustainable development. Accordingly, UNEP, the Economic and Social Commission for Western Asia (ESCWA) and the Food and Agriculture Organization of the United Nations (FAO) agreed on a joint thematic programme for the biennium 1990-1991 for assistance to the Governments of Bahrain, Oman, the United Arab Emirates and Yemen in the preparation of national plans of action to combat desertification. This joint exercise by the three agencies is intended to assist the Governments concerned in the formulation of national plans of action as part of national social and economic development plans, to identify priority desertification control projects and to organize national project funding round-tables for presenting the projects to donors. In the case of Yemen, where the national plan of action had been prepared under previous arrangements with the Government of the former Yemen Arab Republic, the new Government agreed to formulate a single plan for the unified Republic of Yemen. Consequently, a new draft for the whole country has been prepared and was discussed with the relevant technical agencies of the new Government during the latter part of 1990. The official approval of the draft national plan of action and its national long-term programme (1991-2010) is expected to take place early in 1991. This will be followed by the next stage of a national seminar to consider adoption of the national plan of action and the organization of national fund-mobilizing round tables with potential donors.

8. UNEP continued to assist other Governments that are at different stages in development of their respective action plans for combating desertification, namely Argentina, Tunisia, Peru and Mongolia. In Argentina, the Government received UNEP assistance through the Instituto Argentio de las Zonas Aridas (IADIZA) in training of its nationals for establishment of Geographic Information System (GIS) capability, which is essential for integrated analyses required for assessments of environmental state and trends in support of the national plan of action. Funding support has also been provided to IADIZA to enable the institution to initiate research work on desertification, particularly in relation to the mapping and assessment of desertification processes, wild fauna of arid zones, the genetics of useful arid zone plants, range management in arid zones, the improvement of saline soils, sand dune fixation and watershed management. Support has also been received from the Inter-American Development Bank for the implementation of desertification control programmes. However, funding of the several programme activities under the Argentine national plan of action is very limited in the absence of a sustained government policy for its implementation.

9. In Tunisia, the Government has been implementing 8 of the 21 projects identified in its national plan of action formulated in 1986 with the assistance of UNEP. The projects include mapping grazing resources in development zones, establishment of a seed bank, training in the context of desertification control and the integrated development of catchment basins.

Progress in implementing these projects has been satisfactory, with funding from both the Government's resources and external financing. Other projects have been presented for financial support by UNDP, the International Fund for Agricultural Development (IFAD), the Arab Gulf Programme for United Nations Development Organizations (AGFUND), the Swedish International Development Agency (SIDA) and Gesellschaft für Technische Zusammenarbeit (GTZ). Implementation of the national plan of action in Tunisia has on the whole been a success story. Reports indicate that activities carried out under the plan to protect resources and develop agriculture in the regions affected by desertification have contributed to diminishing the extent of desertification damage and have maintained stable agricultural and pastoral activities. Some 60,000 hectares of oases and irrigated lands have been protected against sand dune encroachment and 10,000 hectares prevented from salinization. It is against this background that UNEP assisted the Government of Tunisia to present a comprehensive report on its experience with implementation of its national plan of action at the seventh session of the Consultative Group for Desertification Control in order to share this experience and information with other countries, and possibly to attract additional funding from other donor sources.

10. At the request of the Governments of Mongolia and Peru for assistance in the preparation of national plans of action, preparatory actions were initiated by a preliminary survey undertaken in Mongolia in cooperation with the Economic and Social Commission for Asia and the Pacific (ESCAP) and involving the participation of experts provided by the USSR Commission for UNEP (UNEPCOM) and the Chinese Government. In Peru, discussions have been held with the National Office for Natural Resources Evaluation (ONERN) and arrangements made for the Institution to coordinate national technical activities for the preparation of the plan with funding support provided by UNEP. These activities will be carried out in 1991.

2. Pilot Projects under the African Ministerial Conference on Environment - Cairo Programme for African Cooperation

11. In keeping with UNEP Governing Council decision 14/15 C, which emphasized that national programmes and their process of implementation should be grass-roots-oriented for easier integration into national economic systems, UNEP continued to support African Governments that have identified villages to be developed under the Cairo Programme for African Cooperation. During the period under review, pilot village and stock-raising projects for sustainable food, fodder and fuel production involving popular participation and focusing on women in development had obtained funding from AGFUND, UNDP, the United Nations Sudano-Sahelian Office (UNSO), the World Food Programme (WFP), the Canadian International Development Agency (CIDA) and UNEP and were under implementation in Djibouti, Egypt, Ghana, Uganda, Zaire and Zimbabwe. The UNEP Desertification Control Programme Activity Centre (DC/PAC) also assisted in the formulation of new project proposals for development under the African Ministerial Conference on the Environment (AMCEN) programme in Mozambique and the United Republic of Tanzania. These pilot projects address the problems of

degradation of resource systems and the deterioration of community capacity to cope with natural hazards - drought and floods. They are intended to achieve this through the applications of simple technologies, community involvement and deliberate redirection of governmental policies for the attainment of self-sufficiency in food, energy and other basic requirements as steps towards sustainable development.

12. The pilot village and stock-raising zone projects have received support from the African Governments, but the serious constraint is their financing and their management. A solution to the financing problem does not seem in sight unless the Governments devise effective methods of utilizing locally available resources and integrating traditional systems of resource management in an effort to minimize high-cost capital inputs to the pilot projects. This approach seems well developed in China. After consultations, UNEP and the Chinese Government co-sponsored a training workshop for participants from African countries that have launched AMCEN pilot projects. The objective of the workshop, held at the Nanjing Institute of Environmental Science (NIES), Nanjing, China in October 1990, was to train African villagers and technicians in ecological farming methods in relation to the implementation of AMCEN pilot projects. The workshop was attended by some 20 participants from Egypt, Gambia, Ghana, Kenya, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe. Among the participants were farmers, members of local councils, project managers and government officials from agencies concerned with AMCEN projects. The training programme consisted of instruction and field demonstrations on how self-sufficiency in food, fodder and domestic energy envisaged under AMCEN could be achieved through sustainable and ecologically balanced production of livestock, crops, fish, horticulture and biogas at the village level. As a follow-up to the training workshop, a Manual of Guidelines for Ecological Farming under African conditions will be prepared for use in the field by technicians and farmers.

B. Regional actions and networks

13. In its decision 13/30, the UNEP Governing Council requested the Executive Director to intensify efforts, in consultation with other United Nations bodies and with donor countries, to initiate concrete steps to seek alternative sources of funding to assist the countries of the Southern African Development Coordination Conference (SADCC). ACC has also underlined the potential role of regional and subregional bodies like the Intergovernmental Authority on Drought and Development (IGADD), SADCC and the Ministerial Conference on Desertification (COMIDES) in the efficient implementation of the Plan of Action to Combat Desertification. UNEP accordingly provided assistance to SADCC during 1989-1990 in the areas of training and identification of a regional cooperative programme for combating desertification. The outcome of this effort has been the formulation of a Plan of Action for the Kalahari-Namib region, containing country projects in land use planning, resource management and monitoring, as well as the development of pilot livestock-raising areas in the framework of the Cairo Programme in Angola, Botswana, Namibia, Zambia and Zimbabwe. The projects

proposed under the plan, for a total cost of $US 1 million, have been circulated to members of the Inter-Agency Working Group on Desertification so that they can indicate the scope of technical support for the project during the 1990-1991 biennium within their respective programmes in the SADCC region. The Kalahari-Namib regional action plan promises to become a significant framework for inter-agency and donor cooperation in mobilizing technical and financial assistance to the SADCC regional programme for combating desertification.

14. The AMCEN Deserts and Arid Lands Committee (ADALCO), with support provided by UNEP to the designated focal points of Gambia, Guinea (Conakry) and Mali, prepared a subregional programme for ecological rehabilitation of the South Saharan Zone and the Gum Belt. An action programme for cooperation related efforts to control savannization in the Central African Subregion was prepared by two ADALCO national focal points. The Master Plan for Development of the Nubian Sandstone Aquifer for Combating Desertification in North-East Africa was also prepared for Chad, Egypt, Libya and the Sudan as a framework for the exploitation and development of the regional sandstone aquifer for combating desertification. The Southern Africa Subregional Group of ADALCO was entrusted with the task of defining a programme to control the spread of deserts in southern Africa for the promotion of food production. These subregional programmes have been submitted to ADALCO, at its third and fourth meetings, held respectively in February 1990 at Ouagadougou, and in December 1990 at Algiers, where representatives of IGADD, COMIDES, SADCC and the Governments concerned attended.

15. The Regional Network of Research and Training Centres on Desertification Control in Asia and the Pacific (DESCONAP), established in 1988 with a membership to date of 19 Governments and international organizations in the region, has held meetings in September 1989 and May 1990, at which it reviewed the regional programme focusing on desertification mapping, training and research in desertification control and the involvement of non-governmental organizations and women's groups in the Network. To reinforce its work in desertification mapping, members have established a DESCONAP Programme Office in the Islamic Republic of Iran to coordinate mapping of the arid regions of Afghanistan, India, the Islamic Republic of Iran and Pakistan. The Network has received funding support from ESCAP and UNDP, while UNEP, FAO, UNEPCOM, UNESCO and the World Meteorological Organization (WMO) have also provided technical support to the Network.

16. A Regional Environmental NGO Network for Asia and the Pacific has been launched comprising 10 regional network representatives from Australia, China, India, Indonesia, Japan, Malaysia, Nepal, New Zealand, the Republic of Korea and Sri Lanka. This regional Network, operating with initial funding assistance from UNEP, has engaged in cooperative exchanges of information with regard to soil degradation, desertification and deforestation; this information is disseminated to the grass-roots constituencies of the respective non-governmental organizations to promote environmentally sound natural resource management practices, especially in relation to soils and forestry. In the second phase for expansion of the Network, it is intended to expand the programme to Bangladesh, Fiji, Pakistan, Papua New Guinea, the

Philippines and Thailand during 1991. A workshop is planned for 1991 to enable the Network members to review their work programme and adopt a work plan for the next two to three years. Funding has been sought from the Government of Australia to assist the Network build its programme related to desertification and land degradation control in South-East Asia.

C. Training

17. During the period under review, UNEP has cooperated with the Governments of Argentina, China, Syria and with SADCC and regional and national institutions, namely, UNEPCOM, the Arab Centre for the Study of Arid Zones and Drylands (ACSAD), IADIZA and the Nanjing Institute of Environmental Sciences, with whom a total of eight training courses were organized. A total of 170 participants received instruct' n under this programme in management of dryland natural resources, sustainable food production, and monitoring and assessment of desertification, as well as the provision of public information. Most of the training was organized for developing countries within the regions themselves (Argentina, Syria and Zimbabwe) in keeping with UNEP policy. In addition, members of the Inter-Agency Working Group on Desertification, namely, FAO, UNESCO, UNSO, WMO, the World Bank and the International Institute for Environment and Development (IIED) organized training courses related to desertification control in which a total of 1,000 participants from developing countries affected by desertification were trained.

D. Assessment and mapping of the status of desertification

18. In its resolution 44/172 A, the General Assembly invited UNEP to undertake a general evaluation of progress in implementing the Plan of Action to Combat Desertification to be contributed for discussion at the United Nations Conference on Environment and Development in 1992. In reviewing the previous General Assembly resolution 39/168, which also endorsed a decision of the Governing Council that a further overall assessment of progress in the implementation of the Plan of Action to Combat Desertification should be carried out in 1992, ACC noted that global assessment of desertification and the preparation of a Thematic Atlas of Desertification would constitute key components of the report on general evaluation. Further, ACC invited UNEP "to continue, using the DOEM and IAWGD mechanisms to keep the subject of assessment of desertification under constant review". In carrying out the assessment, UNEP has attached high priority in cooperating with component institutions and those United Nations bodies with expertise in methods of assessing and mapping desertification. In order to consolidate views on assessment methodologies, UNEP convened an Ad Hoc Consultation Meeting in February 1990. This meeting agreed on the following working definition of desertification: "Desertification is land degradation in arid, semi-arid and dry sub-humid areas resulting from adverse human impact". A Technical Advisory Group, composed of scientists from regional and national research institutions was set up; it met in May and November 1990 and in May 1991.

This Group has provided guidance on the assessment process, the content, the structure and the design of the World Atlas of Thematic Maps on Desertification, which will be the published medium of the global assessment of the status and trends of desertification.

19. Some limitations regarding the assessment exercise have been identified from consultations during the Ad Hoc Consultation Meeting in February 1990 and with the Advisory Group. As detailed information on desertification at national level is not available world wide, the assessment of desertification using global and regional data sets will be meaningful mainly at these levels. UNEP is using the Global Assessment of Soil Degradation Map (GLASOD) and climatic information as a baseline for the global assessment of desertification. Other information, such as data on vegetation and rangeland degradation, as well as population pressure, is being considered to the extent that data is available.

20. Considering the complexity of desertification processes, the World Atlas of Thematic Indicators of Desertification will be used as the main medium for reporting on the global assessment of desertification. This Atlas will contain a world map at an approximate scale of 1:10 million, which will show relevant indicators or factors of desertification and land degradation.

21. The global and regional section of the World Atlas contains maps based on bioclimatic and soil degradation aspects in arid, semi-arid and dry sub-humid areas. Information on vegetation and population are also included. The national and local section features methodological approaches in desertification and land degradation mapping in Argentina, China, Kenya, Mali, the Syrian Arab Republic, Tunisia and the USSR.

22. The Atlas will contain the first systematic approach on mapping thematic indicators of desertification at the global, regional and national levels. However, there will still be considerable scope for improvement through the compilation of more detailed data sets, especially those related to the socio-economic aspects of desertification.

E. Information and database

23. The UNEP/DC-PAC Desertification Information System (DESIS), established in accordance with the Governing Council decision 12/10, uses software developed by UNESCO and includes bibliographic reference data on project activities and other databases to facilitate the query-response services. Three major bibliographic reference databases are on desertification (DESBIB: 3,765 records); wind erosion control (BIWIND: 5,655 records), and reference materials in UNEP's desertification library (DELI: 1,511 records). Five databases on desertification control project activities are on: wind erosion (ACWIND: 168 records); the network of researchers on wind erosion (REWIND: 355 records); activities within the United Nations (PROCOM: 325 records); within UNEP (DEPRO: 62 records); and the directory of organizations (DIOR: 561 records). The system has been very useful in responding to an average of

200 requests received per month for information. The arid lands and research institutions bibliography database (DESBIB), developed jointly by UNEP and the Office of Arid Lands Studies of the University of Arizona during 1989, has been completed for distribution to universities, libraries, international training and research institutions and environmental organizations.

24. The Desertification Control Bulletin, with a print run of approximately 3,500 English copies per issue, has been published for distribution as the main medium for the dissemination of desertification control information. In addition, the proceedings of the Ad Hoc Consultative Meeting, held at Nairobi from 25 to 28 February 1990 on "Assessment of Global Desertification: Status and Methodologies" (300 pages) has been published (300 copies) for distribution to research institutions, universities and concerned scientists. The national plans of action of Mali and Mauritania were translated from French into English for distribution (100 copies each) to interested agencies, organizations and individuals for the purposes of exchange of information and soliciting financial support for projects under each of the action plans.

III. ACTIVITIES OF THE UNITED NATIONS SUDANO-SAHELIAN OFFICE: 1989-1990

25. UNSO activities during 1989-1990 continued to focus on the recovery and rehabilitation of natural productive resources and securing the promotion of sustained economic development. During the period under review, UNSO engaged in a number of activities that range from a series of country-focused assistance to planning and coordination to implement projects and programmes dealing with the management of natural resources. New activities related to the preparations for the United Nations Conference on Environment and Development in 1992 have also been initiated.

A. Evaluation of the UNEP/UNDP Joint Venture

26. In 1990 UNEP and UNDP jointly organized for an evaluation of the UNEP/UNDP Joint Venture (UNSO). The evaluation found that the Joint Venture had contributed to significant fund raising; increased awareness about desertification processes and effects in the 22 countries of the Sudano-Sahelian region; and numerous successful programmes and projects. The evaluation recommended that UNSO actions at the national level should continue and be strengthened in order to assist Governments in the region in developing national plans of action and incorporating them into national plans for sustainable development; developing or strengthening relevant institutions; implementing replicable integrated projects and ensuring that the causes of desertification are as well as the symptoms addressed; using available financial resources effectively by avoiding duplication of activities and coordinating the anti-desertification activities undertaken by the international community in the region.

27. Based on the evaluation findings, UNDP and UNEP have initiated discussions on the programmatic aspects of the Venture. The discussions should lead to a revised UNDP/UNEP memorandum of understanding and strengthened programme for the 1992-1993 biennium.

B. Support for planning, coordination and ecological monitoring

28. Assistance to Governments in the area of planning and coordination in 1989-1990 focused primarily on the preparation of strategic frameworks for developing activities for the protection and management of productive natural resources. UNSO activities were directed towards improving the capacity of government focal points dealing with the management of natural resources, as well as the establishment and strengthening of national mechanisms such as advisory and coordinating units, scientific advisory councils or national committees for desertification control. These efforts were geared towards integrating environmental concerns into the mainstream of country development plans.

29. In Kenya, UNSO continued to support the Government's initiatives aimed at developing and implementing a holistic approach to the management of natural resources and the environment. Previous UNSO-supported activities included the creation of a multi-disciplinary Scientific Advisory Committee on Desertification and assistance in the establishment of the Ministry of Reclamation and Development of Arid and Semi-arid Areas and Wastelands. During 1989-1990, support continued to help strengthen the Ministry of Reclamation and Development.

30. In the United Republic of Tanzania, UNSO supported the establishment of a mechanism for coordinating desertification control activities. The project, which has helped the establishment of the Drought and Desertification Control Unit within the National Environment Management Council, supports the preparation of a national plan to combat desertification, the establishment of a database on drought and desertification issues and the mapping of areas threatened by desertification. The proposed national plan identifies a series of project ideas that donors have requested UNSO to develop into full-fledged projects for submission for funding.

31. In Mauritania, support is provided to the Government for the preparation of a thematic round table on desertification. In this regard, UNSO will help the Government take part in "sensitization missions" of senior Mauritanian officials to a number of donors. Such dialogues between donors and recipients, preceding round-table meetings, should help establish a firm consensus of priorities, programmes and resource implications.

32. In Chad, following the completion of the national plan of action to combat desertification, UNSO is assisting the Government in the preparation of a comprehensive programme to be presented during the sectoral consultation meetings that are to follow the 1990 donor round table. UNSO has also initiated and completed a project designed to improve the planning and

management of agricultural, silvicultural and pastoral resources. Using images from the telecommunications satellites LANDSAT and SPOT, the project helped produce maps and data on livestock population and distribution, vegetation cover, bush fires and wind and water erosion features for two of the northern regions of Chad as a tool for improved natural resources management.

33. Consistent with the UNSO objective of promoting coordination of desertification control activities, the office supported a workshop designed to review and harmonize the various strategic frameworks launched in Guinea-Bissau for the management of the natural resources and the environment. Such activities are expected not only to integrate or merge the various environmental frameworks, but also to improve the exchange of information, including indications of planned activities and wider circulation of sector analyses.

34. In Uganda, UNSO supported the Ministry for the semi-arid northern zone of Karamoja and the Karamoja Development Agency in the preparation of a development plan for Karamoja. The plan describes the physical condition, natural resource base and environmental problems of zone and contains proposals to address these problems. Upon approval of the plan by the Government of Uganda, a donors' conference will be convened. Similarly, in Ghana, UNSO initiated a project with the Environmental Protection Council (EPC), to establish a Desertification Control Unit within this body. Through its regional antennas in the north-eastern part of the country, this new unit will carry out a public education programme on drought and desertification control in this area. The Unit will also establish and maintain a database to monitor ecological changes.

35. In Benin and Gambia, UNSO formulated projects geared towards assisting each Government in the preparation and implementation of strategic framework exercises in the natural resources management field. The exercises are composed of various steps, such as the preparation of the strategic framework itself, the identification and strengthening of a focal point responsible for its implementation, the launching of a consultative process within the Government and with the donors, as well as the establishment of a national mechanism to monitor and evaluate the process.

36. Almost all of the activities related to planning and coordination were financed through UNSO general resources.

C. Programmes and projects

37. In 1989-1990, UNSO supported programmes and projects addressed to medium- to long-term environmental rehabilitation issues by focusing primarily on four broad categories: deforestation control; rangeland management and water resources development; soil protection and sand dune stabilization; and integrated land management.

1. Deforestation control

38. UNSO's strategy in this area calls such actions as: (a) increasing wood resources supply through afforestation, reforestation, agroforestry, community agroforestry and restocking of gumbelts; (b) wood resource demand reduction and management through improved wood fuel consumption technologies and wastage reduction; (c) wood resources substitution by other biomass or non-boimass forms of fuel.

39. In 1989-1990, UNSO provided $US 2 million for a project aimed at restocking the Gum Arabic Belt in Darfur, Sudan. Many areas in Darfur have become partially deforested as a result of repeated droughts, while migration from the rural to the urban areas has left the gum gardens unattended. The project, in addition to restocking the Gum Arabic Belt, provides for the establishment of nurseries to ensure the supply of sufficient quantities and varieties of tree species apart from Acacia senegal. The project is also expected to generate additional income to the farmers from the sale of the gum, to initiate activities to introduce fast-growing fuelwood species as well as encourage shelterbelts around farms, villages and towns. This project is supported by UNSO through contributions from the Government of Norway and from AGFUND, as well as an indicative planning figure (IPF) contribution. UNSO is supporting a similar project for the regeneration of Acacia senegal in Mali.

40. In close cooperation with the Permanent Interstate Committee for Drought Control in the Sahelian Region (CILSS), UNSO pursued arrangements for launching tree-seed projects in the CILSS member States with multi-donor financing. These projects will seek to establish and strengthen national tree-seed centres for the purpose of collecting, screening, storing and distributing high quality seed to alleviate the current seed shortages. A regional support project is intended to backstep national efforts and to set up a regional network.

41. In Burkina Faso, UNSO, with more than $US 4 million financing from the Government of Sweden, has launched the third phase of a village woodlots project. This aims to serve both important environmental and productive functions in land use systems and is designed to improve sustained management of the environment and to promote socio-economic development. Further, UNSO continued its support for a $US 1 million agroforestry project in Burkina Faso, establishing a medium- and long-term programme of development for agroforestry and agro-pastoral activities, focusing on the natural and artificial regeneration of Acacia albida, as well as other local species utilized in traditional agroforestry systems. During the first year of implementation, the project concentrated on carrying out preparatory activities, such as organizing training workshops and study tours for extension workers.

42. In 1989-1990, UNSO initiated the second phase of a fuel briquette production project with Danish International Development Agency (DANIDA) support in the Sudan. The project will run for a two-year period at a cost of $US 837,000. Building on the achievements of the first phase, the project

aims to demonstrate the technical and economic feasibility of producing fuel briquettes from agricultural residues, through the operation of a pilot plant and through the undertaking of technical studies. The project is particularly concerned with reducing capital and operating cost through the local production of spare parts and the import of basic presses. Further, the project includes an examination of the possibility of press manufacture in the Sudan. In its demonstration aspect, it is hoped that the project will encourage further private entrepreneurs in the Sudan to establish briquette production using biomass residues (cotton stalks and groundnut shells). The briquettes produced are bought mainly by small industries.

43. Negotiations were completed with the Government of Burkina Faso and SIDA to continue the financing of a project for improved cooking stoves for another three years, beginning in 1990. The new phase will concentrate on developing self-sustainable marketing channels and enhance the national capacity for manufacturing and distribution of over 200,000 stoves.

2. Range management and water resources development

44. Pasture and rangeland degradation affect many parts of the region as human and livestock pressures approach or exceed the carrying capacities of the rangelands. In 1989-1990, UNSO continued to support the development of the second phase of the project for the integrated development of the lake zone in Mali. The project has established several village-level organizations to ensure the management of rehabilitated land and has initiated family-based reforestation in selected target villages. In the coming year, the project aims to carry out water and soil conservation experiments and conduct socio-economic surveys relating to the rational management of bourgou pasture. Preparation is under way for a third phase to help consolidate earlier successful phases.

45. Support for projects dealing with water resources development continued during the period under review. In Mauritania, UNSO provided $US 160,000 in 1990 to support continuation of a project that aims to improve the supplies and management of water resources in M'bagne and Bababe. The project includes irrigation of small-scale production plots for small farmers, as well as assistance for maintenance systems considered vital to sustainable water projects.

3. Soil protection and sand dune stabilization

46. UNSO has continued funding the second phase of the integrated programme of sand dune fixation for terrace farming and basin protection in Senegal. During the first phase, 950 hectares of dunes were fixed, 125 kilometres of windbreaks erected, 200 hectares of village woodlots established and 600 hectares of soils treated to improve their fertility. The success of the first phase, as well as the problem, led to agreement on the implementation of Phase II, with $US 2.1 million funding from the Government of Norway. The

project aims to extend the activities initiated under the first phase by implementing a range of agroforestry activities such as dune stabilization, recovery of soil fertility, road protection, the establishment of windbreaks and woodlots and the strengthening of national capabilities to carry out further activities.

47. In Mauritania, UNSO continued its support to the nation-wide programme of sand dune fixation. The first phase of the project was instrumental in the construction of barriers across dried expanses to change ruinous wind patterns and to stabilize approximately 850 hectares of dunes at 15 sites. The present phase, for which the Government of Denmark made a contribution of $US 5 million, will extend the number of sites to 40, with new emphasis on combined agro-sylvo-pastoral development, which has led to substantial involvement of the local population in the activities.

48. In Cape Verde, UNSO continued to support the project to restore vegetation, increase agricultural and fuelwood production, as well as to improve the quality of life of the rural population in the Sao Joao Baptista Valley. Phase II of the project, launched in 1990 with a contribution of $US 2 million from the Government of Norway, will consolidate the results so far obtained by extending rehabilitation work on an additional 300 hectares of hill slopes. It will also restore existing and launch new irrigation schemes, as well as upgrade old physical infrastructure. The Sao Joao Baptista Valley incorporates 11 villages with about 1,000 inhabitants, 62 per cent of whom are women and 43 per cent are under the age of 15. The project, which is expected to benefit the whole population of the valley, has opened up employment opportunities for some 300 people. It also promoted the establishment of local involvement units to enable the communities to plan and carry out development.

4. Integrated land management

49. UNSO efforts in programmes and projects have placed more and more emphasis on holistic approaches that combine different production activities - mainly cropping, livestock development and forestry.

50. In 1989-1990, UNSO continued its support to the Government of the Niger for the implementation of an integrated land management project. The latter, for which the Government of Denmark made a contribution of $US 8.1 million, is being implemented by the Cooperative for American Relief Everywhere (CARE), an international non-governmental organization, in cooperation with the Niger Forest Service. In 1990, some of the major results of the project were the planting of 600,000 trees and shrubs, the training of 280 farmers in agroforestry practices and the participation of 800 farmers in agroforestry and soil conservation activities.

51. During the period under review, UNSO supported the second phase of the project for the Development of the Lake Faguibine System. With $US 1.8 million financing from the Government of Norway, the overall objective

of the project is the restoration and conservation of the food production potential of the Faguibine zone and the provision of water to the villagers. During the first phase, at which time the project also benefited from an IPF contribution, a pre-feasibility study was undertaken to develop an efficient water flow system to optimize agricultural production. In addition, priority earthworks and vegetation restoration have been carried out with extensive community involvement. During the second phase of the project, the remaining studies and surveys on the physical, economic and climatic situation will be completed to obtain a scheme for optimal utilization of the land in the Lake Faguibine zone and will proceed with the channel clearing works.

5. Special programmes

52. In 1989-1990, the Sahara-Sahel observatory (OSS), a programme to strengthen the mechanisms that currently exist to fight desertification in North Africa and the Sudano-Sahelian region, was initiated by the French Government in conjunction with UNSO. During 1990, activities were launched by UNSO to carry out an inventory of organizations, programmes, projects and experts (OPE) in the field of monitoring the dynamics of desertification and in the field of research.

53. The inventory is designed in two parts: a qualitative inventory based on interviews with institutions during missions by international consultants, and a quantitative inventory based on questionnaires sent out to each of the institutions concerned. For the purpose of the qualitative inventory, UNSO has been sending missions of international consultants throughout Africa, Canada, Europe and the United States, to visit the principal organizations whose activities involve monitoring and research on factors related to natural resource degradation.

6. Resource mobilization

54. In 1988-1989, the total amount of resources mobilized by UNSO through the UNSO Trust Fund was $US 65.4 million, an increase of more than 38 per cent over the resources mobilized in 1987-1988.

55. As in the past, the largest concentration of resources mobilized in 1989-1990, $US 26.5 million, took the form of contributions earmarked for specific projects under trust fund arrangements, identified and formulated jointly by recipient Governments, UNSO and donor agencies. Pledges for 1989-1990 to UNSO general resources totalled $US 15.1 million. In 1989-1990, funding amounting to $US 9.2 million was obtained under Management Service Agreements.

56. During the period under review, UNSO increased its fund-raising efforts while maintaining regular consultations with its main donors, namely, Denmark, Norway and Sweden. In 1989-1990, France joined the group of UNSO donors by announcing a contribution to UNSO general resources, as well as an earmarked contribution for the OSS programme (see para. 53).

7. Coordination at the international level

57. In 1989-1990, UNSO continued to build up its links with the international community, namely international agencies, bilateral donors and the agencies of the United Nations system. Participating at various international forums provided another means for harmonizing views and information exchange leading to programme coordination.

58. In August 1990, UNSO organized a meeting on harmonization of strategic planning frameworks. The meeting, attended by FAO, IBRD, IUCN and UNEP, established preliminary arrangements aiming at a better harmonization and coordination of the various frameworks of interventions such as the Environmental Action Plan (EAP/World Bank), National Conservation Strategies (NCS/IUCN), the National Plans of Action to Combat Desertification (NAPCD/UNEP-UNSO) and Tropical Forestry Action Plans (TFAP/FAO).

8. Serving as the United Nations Focal Point for the Permanent Inter-State Committee on Drought Control in the Sahel and the Intergovernmental Authority for Drought and Development

59. In 1989-1990, UNSO strengthened its working collaboration with and support for both CILSS and IGADD.

60. The most important special event currently involving UNSO, CILSS and IGADD is the preparation for the United Nations Commission on Environment and Development in 1992. UNSO, in cooperation with CILSS and IGADD, assists and supports the countries of the region in their preparatory process for the Conference. To this end, a Joint Steering Committee (JSC) has been established to help identify and support key actions related to the preparatory process of the Conference, at both regional and national levels.

61. In 1990, UNSO, in accordance with the recommendations of the JSC, launched a number of initiatives in the region to help the creation of National Preparatory Committees (NATCOM). A meeting of the 22 Sudano-Sahelian countries and their regional institutions was also convened in January 1991 to follow up on the coordination and elaboration of national and regional strategies, with a view to ensuring that environment and development issues were treated in a consistent and integrated manner.

62. In addition, UNSO has provided support to CILSS, notably to the Sahel Institute at Bamako by providing:

(a) Support for an integrated control programme against pest infestation of the Sahelian vegetation cover. Through the project, which is executed by the Institute, research and training is undertaken and coordinated;

(b) Training assistance for postgraduate level specialists and intermediary staff in rural development and desertification control, within

the framework of the Integrated Grasslands Management Training Programme in the Sahel;

(c) Support for the development of a Sahelian environmental education programme at the secondary level.

9. Increasing public knowledge and awareness on drought and desertification issues

63. UNSO has concentrated its efforts to create a greater degree of public awareness on the need to improve the protection and management of the productive capacity of the natural resources. Its activities focused on supporting awareness-raising events, promoting environmental education and communicating its experiences on projects and programmes to decision makers and development specialists.

64. In 1989-1990, UNSO supported a wide range of activities. In Uganda, a workshop entitled "A Green Future for Uganda" was held in cooperation with the Uganda National Council of Women. Eighty participants from the Uganda Women's Tree Planting Movement, the National Council of Women and women from all districts of Uganda discussed environmental issues.

65. UNSO financed the formulation of a CILSS programme designed to educate high school students to be effective channels for disseminating skills and attitudes that help in combating the effects of desertification. This programme, which was officially adopted by the CILSS Heads of State Conference in January 1988, aims at developing and incorporating an environmental education programme in all academic curricula within a span of 6 to 7 years. The programme is designed to provide students with better knowledge of their environment and of their relationship to it, and to sensitize them to environmental issues. The project will introduce into the secondary school curricula educational information that promotes better care of Sahelian natural resources. It will also ensure that the necessary institutional arrangements, such as trained teachers and teaching materials of good quality, are at hand.

66. During 1989-1990, UNSO produced the first two issues of the UNSO Technical Publication Series. The first introduces readers to the methods and technologies currently in use for monitoring ecosystems, based on the experience of the Ecological Monitoring Centre in Senegal. The second, deals with the experience in Mali on the regeneration of bourgou (Echinichloa stagnina) to rehabilitate degraded natural pastures. These publications offer to the development community approaches and views drawn from UNSO experience.

10. Conclusion

67. Overall, UNSO has made considerable progress during 1989-1990 in addressing the problems of natural resources management in the Sudano-Sahelian Region.

68. The issues related to management of natural resources are beginning to be treated more systematically in country development plans. There is also increasing support among donors, international development organizations and the countries themselves for practical arrangements to coordinate, monitor and share information at local level.

69. With the beginning of a new decade, environmental issues have been placed even higher on national and international political agendas. UNCED 1992 will be an important forum at which to launch a new programme of international cooperation in this field.